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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,551	08/06/2001	Sam Fong Yau Li	1781-0225P	6106

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EXAMINER	
GAKH, YELENA G	

ART UNIT	PAPER NUMBER
1743	

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/831,551	LI ET AL.	
	Examiner	Art Unit	
	Yelena G. Gakh, Ph.D.	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *17-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☒ Claim(s) *1,4 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05/11/01, 08/06/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Election of claims 1-16 with traverse, filed on 03/29/04 is acknowledged.

In response to the Applicant's Remarks regarding restriction requirements the examiner would like to notice that if the arguments regarding restriction requirements based on the lack of unity of the inventions are proper, it does not matter if such restriction requirements were not imposed by the International Searching Authority. The basis for the restriction requirement for the instant application is the absence of a special technical feature between two inventions. No arguments regarding novelty of the device recited in claim 1 over the prior art of Lenz et al. (US 4,747,700) were presented by the Applicant. While Lenz may be not the closest prior art, Stockbarger method and apparatus for crystallization having separately heated, individually controlled upper and lower zones, separated by an insulating diaphragm and utilizing metal wire for crystallization are well known in the art, see e.g. Swinehart (US 4,055,457). Using a plurality of the same devices for plurality of samples is obvious for anyone of ordinary skill in the art. Moreover, the device recited in claim 1 can be used for different purpose than crystallization, e.g. for conducting catalytic temperature-controllable reactions, and therefore can be searched in a different class, than the method claims. It necessary puts a serious burden for the examiner to search and examine different inventions. Therefore, the restriction is proper and is made FINAL.

Regarding the remarks on IDS and drawings: consideration of prior art provided in an IDS and examination of drawings is that part of the examination process of the application, which does not start before the election of the restrictable invention is made. Also, the examiner would like to notice that she is she, rather than he, which is supposedly clear from the name.

Specification

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to as containing the subject matter, which is not written "in such full, clear, concise, and exact terms as to enable any person skilled in the art" to practice the invention in its best mode. The specification discloses "a first" and "a second temperature control means" as any means capable of controlling the temperature of the samples, including water bath and slush bath, which also are the only temperature control means represented in the Examples. It is not clear from the specification, however, if special containers with temperature regulating tools are provided to hold water bath and slush bath. If they are not provided, it is not clear, how the temperature of these baths is controlled and regulated, since the water bath and slush bath on their own are not capable of maintaining certain temperature for a prolonged period of time, and cannot be considered conventional "temperature control means". Moreover, it is not clear from the drawing, how the slush bath can comprise a plurality of conducting means (e.g. copper wires) the way it is represented in the drawing. In fact, no temperature control means with a plurality of conducting means the way they are depicted on Figure 1, is disclosed in the specification, and therefore it is not clear, what such temperature control means might be. Since the second temperature control means the way they are represented on Figure 1 as thermostat 12 is supposed to be inventive, a detail description of such temperature control means is required.

Claim Objections

3. Claims 1, 4 and 12 are objected to because of the following informalities: the claims recite "container means for containing" a plurality of samples. The expression should be rewritten as "containers" or "means for containing" to avoid tautological language. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a first" and "a second temperature control means", which are represented on Figure 1 as thermostats 11 and 12. As it is indicated above, the specification does not disclose, how water bath and slush bath can be temperature control means represented on Figure 1, especially with the second temperature control means comprising a plurality of conducting wires. The water bath and slush bath cannot be considered conventional temperature control means, since they do not maintain any desirable temperature; however, they are the only examples disclosed in the specification. Since it is not quite clear from the specification, what "temperature control means" might be, with water and slush baths not being conventional temperature control means, the claims are rendered unclear and indefinite.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 1-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Swinehart (US 4,055,457).

Swinehart discloses a method and apparatus for both Stockbarger and Kyropoulos crystal growth. The following disclosure of one of the embodiments corresponds to the recited apparatus of claims 1-16 except for the plurality of means: in Stockbarger furnace "the salt is loaded in a quartz crucible and several loadings may be required because of shrinkage of the salt as it melts. .... A conduit is also inserted through the cover and the tip of the conduit is placed above the surface of the melt so as to permit vapors of bromine contained in a reservoir outside the furnace, to contact the melt as it is grown into an ingot. The **proper temperature gradient** is established between the **upper and lower zones** of the furnace using recording thermocouples above and below the **separating diaphragm or baffle**. When conditions for crystal formation are obtained, the crucible is placed at such a level that the tip of the cone is coplanar with the diaphragm. A **metal thin finger** extending up from a gear rack shelf of an elevator mechanism makes contact with the tip of the crucible cone so that, with the rest of the metal crucible support being insulated from the crucible itself by a layer of alundum, **heat is drawn away from the very tip of the crucible first, thus starting the crystallization at that point**. After the crystal is started, the crucible is lowered at a predetermined rate to provide optimum temperatures and a desirable temperature gradient. After the crystal ingot is completely grown, it is separated from the crucible and allowed to cool gradually" (col. 5, lines 12-40).

While Swinehart does not specifically disclose that insulating diaphragm is made of plastic foam, this material is conventionally used for insulation.

While Swinehart does not specifically disclose the size of wires, "the size of an article is not a matter of invention" (*In re Rose*, 105 USPQ 237 (CCPA 1955)).

While Swinehart does not disclose a plurality of such apparatus, "mere duplication of parts without any new and unexpected results is within the skill in the routineer in the art" (*In re Harza*, 124 USPQ 378 (CCPA 1960)).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Garrett (US 3,918,916)* discloses "plural chamber serial flow forced air cooled crystallizer"; *Gotoh et al (US 4,772,487)* teach "method and apparatus of forming solid phase reagent in micromodule"; Sakabe et al. (US 5,056,427) disclose "sealing of cavity on reagent tray"; *Atwood et al. (US 5,475,610)* disclose "thermal cycler for automatic performance of the polymerase chain reaction with close temperature control"; *Kasma (US 5,459,300)* disclose "microplate heater for providing uniform heating regardless of the geometry of the microplates"; *Mohan et al. (US 5,888,830)* disclose "apparatus and process for multiple chemical reactions"; *Dahk et al. (US 6,342,185 B1)* disclose "combinatorial catalytic reactor"; *Freitag et al. (US 6,485,692 B1)* discloses "continuos feed parallel reactor".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yelena G. Gakh
4/27/04